



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,004	01/17/2002	Anthony C. Zuppero	22122878-10	9133

26453 7590 07/12/2006
BAKER & MCKENZIE LLP
1114 AVENUE OF THE AMERICAS
NEW YORK, NY 10036

EXAMINER

DIAMOND, ALAN D

ART UNIT	PAPER NUMBER
----------	--------------

1753

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,004

Applicant(s)

ZUPPERO ET AL.

Examiner

Alan Diamond

Art Unit

1753

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 27-37 and 42-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 and 27-29 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 30-37 and 42-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Comments

1. The 35 USC 112, first paragraph, rejection of claim 49 has been overcome by Applicant's amendment of the claim
2. All obviousness-type and provisional obviousness-type double patenting rejections have been overcome by the terminal disclaimers filed April 28, 2006.
3. Upon reconsideration, it is the Examiner's position that Nienhaus et al, previously relied upon in the Office action of March 7, 2005, can be used to reject the instant claims, as set forth below.

Claim Rejections - 35 USC § 102/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 7, 8, 30-37, and 42-49 are rejected under 35 U.S.C. 102(a) as being anticipated by, or under 35 U.S.C. 103(a) as being obvious over Nienhaus et al, "Direct detection of electron-hole pairs generated by chemical reactions on metal surfaces," Surface Science, (2000), pages 335-342. Nienhaus et al published on January 20,

2000. Nienhaus et al published on January 20, 2000. Provisional application 60/262,331, having a filing date of January 17, 2001, supports instant claims the rejected claims. Accordingly, said claims have a priority date of January 17, 2001. Thus, said January 20, 2000 publication date is a 102(a) date with respect to said claims.

Nienhaus et al teaches a method wherein current (i.e., instant energy) is generated by exothermic chemical reaction on metal surfaces (see abstract). Chemically created hot electrons (excited carriers) travel ballistically through a metal film, traverse a Schottky barrier (junction) and are detected as chemicurrent in the diode (see abstract). The reaction can be, for example, chemisorption of molecular oxygen or adsorption of atomic hydrogen on Ag (see abstract). It is the Examiner's position that the instantly claimed using, coupling, causing, collecting, and converting steps inherently occur in Nienhaus et al's process. Indeed, Nienhaus et al discusses adsorbate vibrational damping (see page 335), and it is the Examiner's position that the adsorbed atomic hydrogen or molecular oxygen (i.e., the product of the chemical reaction) is "highly vibrationally excited". Plural of Nienhaus et al's oxygen molecules an/or hydrogen atoms read on the instant "reactants". Alternatively, for example, the combination of hydrogen and deuterium can be used for adsorption (see the paragraph bridging the left and right columns on page 336). There is abstraction and re-adsorption (see Figure 2 and page 338), and thus, at least some of the products of the catalytic reaction desorb and leave a surface of the catalytic reaction. In other words, for

Art Unit: 1753

example, a product of the catalytic reaction is adsorbed oxygen molecules, and the adsorbed oxygen molecules then desorb, as here claimed.

Since Nienhaus et al teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

In addition, the presently claimed using, coupling, causing, collecting, and converting steps, and the presently claimed inverted population, would obviously have been present once Nienhaus et al's method is performed. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

Response to Arguments

7. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

8. Claims 4-6 and 27-29 are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
July 9, 2006

A handwritten signature in black ink, appearing to read 'Alan Diamond', with a stylized flourish at the end.